

placement may well relieve patient anxiety by eliminating practically all of the breast tissue with its malignant potential. Patient selection for this procedure is important because the cosmetic results and incidence of complications following operation vary with the type of breast that requires reconstruction. Application of the techniques of breast reconstruction with prosthetic implants may also be indicated in selected patients following radical mastectomy, particularly where the pectoral muscles have been spared.

JOHN Q. OWSLEY, JR., MD

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The Use of Pressure in Control of Hypertrophic Burn Scars and Contractures

SCAR HYPERTROPHY AND CONTRACTURE are two of the most frustrating sequelae of thermal injury. Hypertrophic scars may occur in any area of the body except those areas in which the skin is splinted by its attachment to underlying structures (for example, scalp, palms of the hands, soles of the feet and tip of the nose). Contractures usually occur across joints.

The development of hypertrophic scars and contractures is so common, especially in children, that they are frequently accepted as natural consequences of thermal injury.

At the Shriners Burn Institute in Galveston, Texas, it has been shown that these sequelae can be significantly altered and controlled by the use of special techniques. The application of continuous and controlled pressure through the use of custom-formed splints and custom-made, anti-burn scar plastic supports has yielded a high degree of both non-surgical control of scar contracture and hypertrophic scar formation.

The healed burn wound in its early stages is characterized clinically by increased warmth, redness and firmness. This scar is composed of young, actively growing, dynamic tissue which responds readily to many stimuli. This tissue will rapidly shorten if not controlled by an opposing force. The opposing force may consist of splinting, traction, pressure, exercise or a combination of these.

Splints can be easily made by using "orthoplast" isoprene which is simple to cut, mold and adapt. Used properly these splints will decrease contracture formation.

Constant pressure following healing can be applied by the use of elastic wraps or Jobst® gradient pressure garments which are custom made specifically for the burn patient. For maximum effectiveness the garments must be properly fitted and applied as soon as healing and graft take permits. The application of pressure should be constant except for brief periods which should not extend for more than one hour.

These garments must be worn continuously for at least six months and in some cases, longer. The general consensus is that pressure should be applied as long as the scar has the clinical appearance of an active scar, that is, as long as it remains hyperemic and firm.

ANGELO CAPOZZI, MD

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Perils of Body Contouring

THE CONCEPT of "body contouring" has become increasingly popular as shown by reports in professional journals and particularly by a multitude of articles in popular newsstand magazines. Public acceptance of body contouring is evident from the increased requests for such procedures being received in many plastic surgery offices.

Persons who have conscientiously pursued a rigid weight reduction program, often with a loss of more than 100 pounds, are frequently dismayed with the hanging folds of skin and subcutaneous tissue in the face, neck, arms, breasts, abdomen, buttocks and thighs. Despite rigorous exercise programs, the redundant skin cannot be "firmed up" and these patients are ideal candidates for total body contouring. Women who have multiple abdominal striae following pregnancy and persons with congenitally-determined excessive fatty deposits in the buttocks and thighs are also good candidates for body contouring.

Although obvious physical and psychological improvement may be attained by such surgical procedures, the prospective patient must be fully informed of the multiple risks and complications inherent in such procedures. Conspicuous scarring is frequently present postoperatively. Often these

scars can be hidden in areas normally covered with clothing (for instance, the low transverse abdominal scar resulting from abdominal lipectomy). Scars in the thigh lift may be hidden in the groin and buttock folds. The scars resulting from vertical incisions in the thighs or upper arms are impossible to hide when wearing light summer clothing. Most suture lines are closed under moderate tension and this frequently results in wide, hypertrophic or keloid scars. Hematoma, seroma, skin and subcutaneous necrosis, anesthesia and lymphedema may delay recovery for months and produce more patient dissatisfaction than did the presenting complaint.

FRANKLIN ASHLEY, MD
DENNIS P. THOMPSON, MD

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Travase®: An Effective Proteolytic Enzyme in the Treatment of Burns

TRAVASE* is a remarkably effective proteolytic enzyme and is especially useful in the rapid debridement of the acute burn wound. It is known to be 5 to 16 times more effective than any other known debriding agent.

Travase is a broad spectrum natural protease derived from cultures of *Bacillus subtilis*. It functions by degrading and liquifying complex denatured proteins of the necrotic wound to amino acids and acid soluble peptides.

A clinical evaluation of Travase ointment was begun early in 1971. Sixty-eight patients, ranging in age from one and a half years to eighty-six years, were treated over the ensuing sixteen months. Whenever possible, symmetrical areas were treated with the enzyme and adjacent areas treated without enzymes to serve as controls. Therapy was started as early as the first day in minor second and third degree burns but usually on the second to the fifth day in major burns.

First, the patient is tubbed daily in a Hubbard® tank and loose debris is trimmed. After removal from the tank, a thin layer of Travase is applied to a selected wet area (not more than 15 percent of the burned areas). Then this is covered with the topical therapy of choice, such as silver sulfadiazine or sulfamylon, on fine mesh gauze. A wet occlusive dressing of normal saline is applied

above this and may be wrapped by Kerlix® and bias stockinette. This is then moistened every four hours and changed twice daily. The treatment is continued for three to ten days, depending upon the response. A continuous wet dressing is absolutely necessary for optimum and rapid debridement.

In our series of 68 patients, 85 percent were three-quarters debrided within eight days and ready for autografting two days later. Six of our ten failures occurred when treatment was started after the first burn week or when the eschar became leathery and dry. No toxic, allergic or adverse reactions were encountered. There was no interference with normal epithelialization and, in fact, Travase was often helpful in delineating second degree burns from third degree burns. The only side effects noted were occasional mild transient burning pain and occasional bleeding controlled by the occlusive dressing.

In conclusion, Travase, or sutilains ointment as it is known, appears to be a major improvement over the other debriding agents in the treatment of acute burn wound. The burn eschar can be rapidly and safely dissolved if the ointment is properly used and the burn wound can be prepared for skin grafting two weeks earlier than previously possible.

VINCENT R. PENNISI, MD

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Lymphedema of the Extremity

SEVEN PATIENTS WITH LYMPHEDEMA, of either congenital or acquired cause, have been successfully managed by staged subcutaneous excision.

Bed rest with periodic elevation of the extremity was continued for two to five weeks until all edema had resolved. During this period, two units of blood were drawn to be readministered as an autotransfusion during the operative procedure to avoid the dangers of homologous transfusion. The first operative procedure was done on the medial aspect of the lower leg. Flaps were developed anteriorly and posteriorly from a midlateral incision, and all of the underlying subcutaneous tissue and muscle fascia were resected to expose the underlying gastrocnemius muscle. Considerable excess skin was excised upon closure of the wound. The second stage was done two months later on the lateral aspect of the lower leg. When an addi-

*Travase® is a product of Flint Laboratories.